

# Body Weight

## Plasma/Serum Lycopene and Disease Risk

### Main findings

- No studies specifically investigated the effect of tomato/tomato-based products or lycopene on weight loss or weight management endpoints.
- People with higher BMIs or greater fat mass have lower concentrations of plasma carotenoids and lycopene. This may reflect dietary patterns, absorption and or metabolic insufficiencies in overweight/obese individuals compared to healthy weight individuals.

### Summary of studies and outcomes

- Number of studies = 9
- Risk estimates (RE) = 9
  - (-) = 6
  - N = 3
  - (+) = 0
- Risk estimates by Tomato or Lycopene category
  - $\sqrt{GT}$  G. Tom =
  - $\sqrt{PT}$  P. Tom =
  - $\sqrt{FT}$  F. Tom =
  - $\sqrt{Lyco}$  Lyco = 6 (-), 3 (N)

**Table: Relationship between plasma/serum Lycopene and Body weight management**

| Study Type | N= studies | NEGATIVE ASSOCIATION (beneficial) |               |         |               |               | NEUTRAL ASSOCIATION (no associated risk or benefit) |               |         |          |       | POSTIVE ASSOCIATION (risk) |         |         |               |       |
|------------|------------|-----------------------------------|---------------|---------|---------------|---------------|---|---------------|---------|----------|-------|----------------------------|---------|---------|---------------|-------|
|            |            | Sample size, n=                   |               |         |               |               | Sample size, n=                                     |               |         |          |       | Sample size, n=            |         |         |               |       |
| BW         |            | ≤100                              | 101-200       | 201-500 | 501-1000      | ≥1000         | ≤100  | 101-200       | 201-500 | 501-1000 | ≥1000 | ≤100                       | 101-200 | 201-500 | 501-1000      | ≥1000 |
| RCT        | 0          |                                   |               |         |               |               |   |               |         |          |       |                            |         |         |               |       |
| Interv     | 2          | $\sqrt{Lyco}$<br>$\sqrt{Lyco}$    |               |         |               |               |   |               |         |          |       |                            |         |         |               |       |
| PC         | 2          |                                   | $\sqrt{Lyco}$ |         |               |               |   |               |         |          |       |                            |         |         | $\sqrt{Lyco}$ |       |
| CC         | 0          |                                   |               |         |               |               |   |               |         |          |       |                            |         |         |               |       |
| Cross Sec  | 5          |                                   | $\sqrt{Lyco}$ |         | $\sqrt{Lyco}$ | $\sqrt{Lyco}$ | $\sqrt{Lyco}$                                       | $\sqrt{Lyco}$ |         |          |       |                            |         |         |               |       |
| Eco        | 0          |                                   |               |         |               |               |   |               |         |          |       |                            |         |         |               |       |

$\sqrt{Lyco}$  – Represents plasma/serum lycopene.